

RUELLIA IN THE EASTERN UNITED STATES

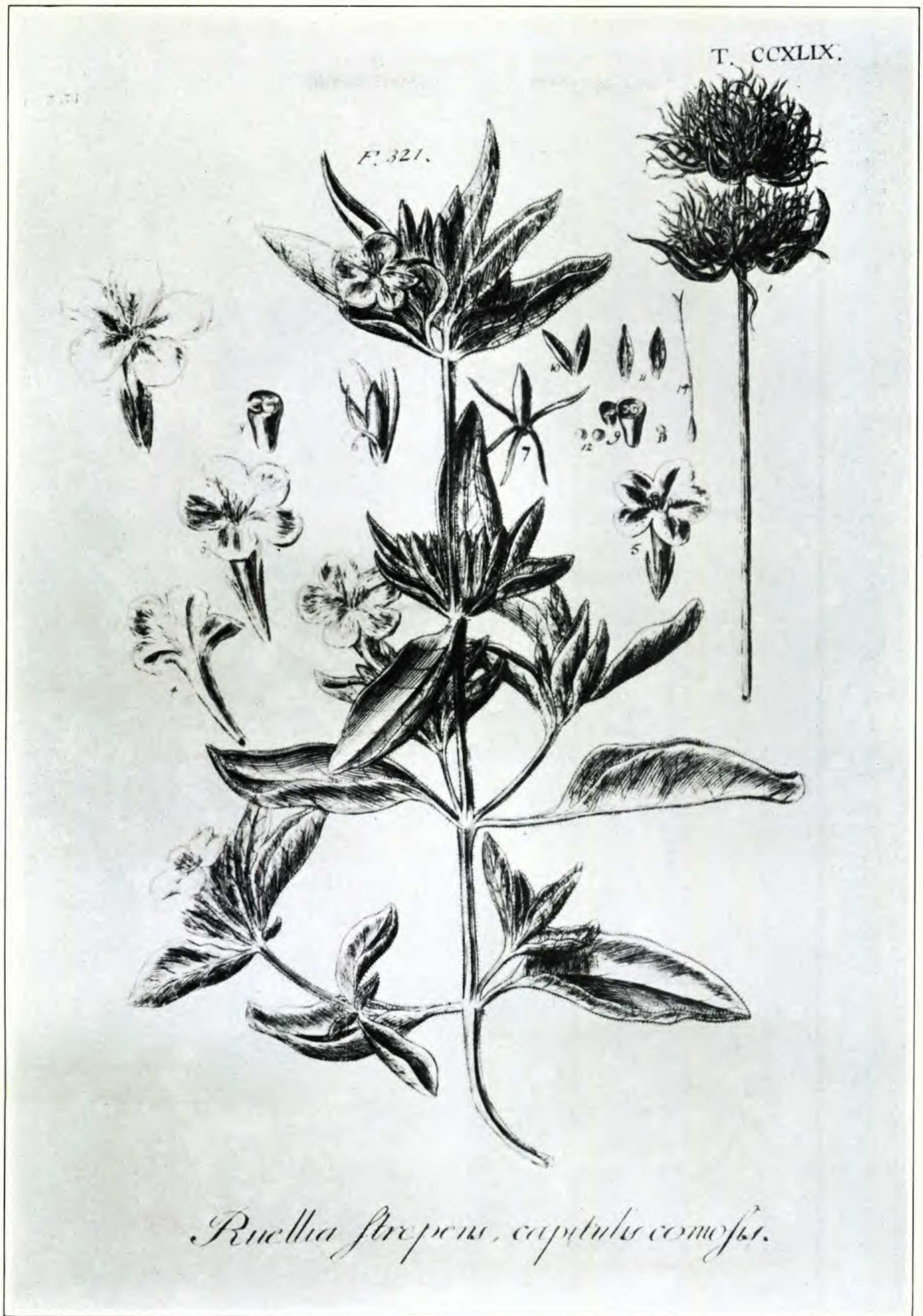
M. L. FERNALD

(Continued from page 63)

11. *R. CAROLINIENSIS* (Walt.) Steud. Erect, simple to divergently or strictly branched, 1–9 dm. high, canescent-pilose, villous, hirsute, puberulent or rarely glabrescent; the upper internodes greatly abbreviated, the lower more elongate, at least the upper with crowded leaves and glomerules: lowest leaves more or less obovate and rounded at summit; middle and upper leaves distinctly petioled, lanceolate to ovate, oval, elliptic or oblong, commonly strigose above, either strigose, hispid, pilose or glabrescent beneath: glomerules very short-peduncled to subsessile, mostly crowded, at 1–4 upper nodes (or in var. *dentata* up to 9 pairs of glomerules extending down often to base of plant): bracts oblong-lanceolate to elliptic, narrow, nearly equaling to shorter than calyx: calyx-segments linear-setaceous, 1.3–2.5 cm. long, usually shorter than corolla-tube, copiously ciliate (more rarely eciliate): corolla lilac- or lavender-blue, 2–5 cm. long; the slender tube 1.3–2.7 cm. long; the campanulate-obconic throat 1–1.5 cm. broad at summit; expanded limb 2–4 cm. broad: capsule glabrous, pilose or hirtellous, 1.2–1.7 cm. long; seeds orbicular to oval, 3 mm. long.—Our most polymorphous species, consisting of several locally constant but marginally intergrading varieties and many minor but morphologically consistent forms. The chief variations are the following.

- a. Stem simple or with mostly strongly divergent branches from lower and median axils, these branches commonly elongate and flowering at summit; the upper internodes canescent-pilose to softly villous; leaves elliptic, subrhombic, oval or narrowly ovate, membranaceous and pliable, with more or less undulate surfaces (slightly crumpled even when carefully pressed); calyx-segments canescent-puberulent to villous on back: corolla 2.5–5 cm. long; capsule pilose-hirtellous to glabrous. . . . b.
- b. Upper internodes of stem and branches copiously white-pilose and commonly white-villous; leaves white-villous to canescent-pilose beneath when young, copiously strigose above; capsule usually densely pubescent. . . 11a. Var. *typica*.
- b. Upper internodes merely short-pilose or with only few elongate hairs; leaves glabrescent or merely sparsely hirtellous beneath; capsule usually glabrous or promptly glabrate.
 Calyx-segments ciliate. 11b. Var. *semicalva*.
 Calyx-segments eciliate. 11c. Var. *semicalva*, forma *detonsa*.

- a. Stem simple or with few ascending to suberect (very rarely strongly divergent) branches, spreading-hirsute, pilose, puberulent or glabrescent, the branches when borne from the middle and upper axils rarely prolonged or floriferous; leaves flat (not crumpled when carefully pressed), lanceolate to ovate, oval, elliptic or oblong, membranaceous and flexible to thickish, hard and firm, strigose to hispid along principal veins or quite glabrous beneath, remotely strigose to glabrescent above; corolla 2–4.5 cm. long; capsule usually glabrous. . . . c.
- c. Leaves of upper more or less approximate nodes chiefly longer than those below, entire or not very dentate; 1 or 2 (rarely 3 or 4) nodes of the main axis floriferous, the lowest floriferous ones from closely crowded to 10 (–15) cm. apart; stem simple, only rarely branched. . . . d.
- d. Longer leaves of the uppermost nodes broadly lanceolate to oval, ovate or elliptic, if lance-subacuminate 1.5–4.5 cm. broad; calyx-segments glabrous or nearly so on back; summit of throat of corolla 0.7–1.5 cm. broad, expanded limb 2.5–4 cm. broad. . . . e.
- e. Leaves membranaceous, pliable, oval, ovate or elliptic to broadly lanceolate. . . . f.
- f. Stem stoutish to slender, 1–5 mm. thick at base, 1–9 dm. high; larger leaves 5–12 cm. long, if obtuse mostly more than 7 cm. long. . . . g.
- g. Leaves strigose or hispid on veins beneath; calyx-segments ciliate.
Internodes of stem (or some of them) copiously spreading-hirsute. . . . 11d. Var. *membranacea*.
Internodes puberulent to glabrescent, at most with remote elongate trichomes
11e. Var. *membr.*, forma *breviberbis*.
- g. Leaves glabrous beneath.
Calyx-segments ciliate; internodes of stem usually pubescent; upper surfaces of leaves usually strigose. . . . 11f. Var. *membr.*, forma *hypopsila*.
Calyx-segments eciliate; internodes glabrescent or glabrous; upper surfaces of leaves glabrous or essentially so. . . . 11g. Var. *membr.*, forma *laevior*.
- f. Stem filiform, 1–2 mm. thick at base, 1–2 (–4) dm. high; leaves membranaceous, elliptic to oblong, the larger ones 2–6 cm. long, obtuse to rounded at apex.
Calyx-segments ciliate; internodes (or some of them) of stem copiously villous-hirsute with divergent hairs. . . . 11h. Var. *nanella*.
Calyx-segments eciliate; internodes glabrescent or merely puberulent. . . . 11i. Var. *nan.*, forma *eciliata*.
- e. Leaves subcoriaceous, firm and stiff, lanceolate to lance-ovate, subacuminate; stem rigid, 4.5–9 dm. high. . . . 11j. Var. *cheloniformis*.
- d. Longer leaves of the uppermost nodes narrowly lanceolate to lance-linear, 0.5–1.5 (–2) cm. broad; stem slender, 1.5–7 dm. high; calyx-segments canescent-pilose to glabrescent; throat of corolla 5–10 mm. broad at summit, expanded limb 2–3.5 cm. broad. . . . 11k. Var. *salicina*.
- c. Leaves of flowering summit gradually much reduced in size; 4–9 nodes of well developed main axis bearing glomerules; all but upper internodes elongate; stem frequently with



Copy, slightly reduced, of the Dillenian plate of RUELLIA STREPENS, CAPITULIS COMOSIS



Photo. B. G. Schubert.

RUELLIA CAROLINIENSIS, var. *SEMICALVA*: FIG. 1, TYPE, $\times 3/7$; FIG. 2, portion of internode, $\times 10$; FIG. 3, lower, and FIG. 4, upper surface of leaf, $\times 10$; FIG. 5, calyx and capsule, $\times 2$; FIG. 6, calyx-segment and portion of capsule, $\times 10$

elongate floriferous ascending basal branches; median leaves oblong, oblong-lanceolate, ovate or elliptic, subequal, subcoriaceous, often undulate-dentate. 111. Var. *dentata*.

11a. Var. **typica**. Stem when well developed 1.5–7 dm. high, simple, or with divergently to horizontally spreading elongate branches mostly flowering at tips, obtusely angled, canescent-pilose to copiously white-villous; middle and lower internodes greatly elongated (5–18 cm. long), the uppermost greatly abbreviated: principal leaves elliptic, subrhombic, oval, ovate or ovate-lanceolate, membranaceous, slender-petioled, obtuse to acute, white-villous to villous-hirsute or canescent-pilose beneath when young, closely strigose above; the blades 3–10 cm. long and 1.5–4 cm. broad, with somewhat undulate surface, thus crumpled or puckered in drying: glomerules very short-peduncled, from 1–3 approximate or subapproximate upper nodes and at tips of longer branches, 2–many-flowered: bracts oblong-lanceolate to narrowly elliptic, nearly equaling to shorter than calyx: calyx-segments linear-setaceous, white-villous or canescent-pilose on back, villous-ciliate, 1.3–2.3 cm. long, usually considerably shorter than corolla-tube: corolla bluish-lavender, 2.5–5 cm. long; the slender tube 1.3–2.7 cm. long, the campanulate-obconic throat 1–1.5 cm. thick at summit; expanded limb 2.5–3.5 cm. broad: capsule often densely pilose-hirtellous, sometimes glabrous, 1.4–1.7 cm. long.—*R. strepens*, *capitulis comosis* Dillenius, Hort. Elth. ii. 330, t. 331 (1732). *R. strepens* L. Sp. Pl. 634 (1753), in part, not L. Mantiss. Alt. 422 (1771). *Anonymos caroliniensis* Walt. Fl. Carol. 168 (1788). *Pattersonia caroliniensis* (Walt.) J. F. Gmel. Syst. 925 (1791), the binomial wrongly ascribed to Walter, p. 167 (instead of 168) with a brief summary of Walter's generic diagnosis. *R. hybrida* Pursh, Fl. Am. Sept. ii, 420 (1814); LeConte in Ann. Lyc. N. Y. i. 140 (1824), in part only; Small, Fl. Se. U. S. 1084 (1903) and Man. 1229 (1933). *R. strepens* sensu Ell. Sk. ii. 109 (1822), not L. emend. *R. caroliniensis* (Walt.) Steud. (as *carolinensis*), Nom. ed. 2, ii. 481 (1841), based only on "*Patersonia carolinensis* Walt.", without further reference, this obviously copied (with change of spelling of both names) directly from J. F. Gmelin; Blake in RHODORA, xxii. 134 (1915), in part, excluding *R. ciliosa* and *R. carol.* var. *parviflora* (Nees) Blake and all synonyms cited under it. *Dipteracanthus strepens*, γ . *Dillenii* Nees in DC. Prodr. xi. 122 (1847), at least as to Dillenian plant. *D. ciliosus*, β . *hybridus* (Pursh) Nees l. c. 123 (1847), in part. *D. Mitchillianus* Nees l. c. (1847). *R. ciliosa*, var. *hybrida* (Pursh) Gray, Syn. Fl. ii¹. 326 (1878), in part.—Sandy woods, Florida, north to eastern South Carolina; Tennessee, Kentucky and eastern Arkansas (unless otherwise noted, specimens distributed as *R. hybrida*). SOUTH CAROLINA: LANCASTER CO.: rocky hillside, 40-

Acre Rock, west of Taxahaw, *Dorothy Huntley*, no. 256 (Duke). Horry co.: low woods near Myrtle Beach, July 13, 1932, *Coker & Totten* (NC). GEORGETOWN co.: sandy woods, Brookgreen Gardens, *F. G. Tarbox*, no. 567 (US). WILLIAMSBURG co.: rich woods, 10 miles southeast of Gourdin, *Godfrey & Tryon*, no. 433. BERKELEY co.: Santee Canal, *H. W. Ravenel*, as *R. strepens*, changed by Asa Gray to *R. ciliosa*, var. *hybrida*. CHARLESTON co.: Charleston, June, 1902, *Wm. Palmer* (US), as *R. parviflora*. BEAUFORT co.: Bluffton, 1872, *Mellichamp* (Mo, US); St. Helena, 1878, *Laura Towne* (Pa), as *R. ciliosa*. GEORGIA: WITHOUT STATED LOCALITY: *Chapman*, CHATHAM co.: Savannah, *Mrs. Say*. FLORIDA: WITHOUT DEFINITE LOCALITY: E. Florida, *Chapman* (NY), as *Dipteracanthus Mitchillianus*. DUVAL co.: dry rich ground near Jacksonville, *A. H. Curtiss*, no. 4764 (Mo, NY, US), as *R. strepens*, one sheet changed to *R. hybrida*, another to *R. parviflora*; St. Nicholas, May 12, 1896, *L. H. Lighthipe* (NY), as *R. ciliosa*, April 20, 1897, *J. R. Churchill*; vicinity of Mayport and Jacksonville, *H. D. Keeler* (NY), as *R. ciliosa*; Hummock, *Fredholm*, no. 5150, as *R. ciliosa*. ST. JOHNS co.: May 20-22, 1885, *G. C. Whitlock*. CLAY co.: dry oak woods, Green Cove Springs, April 14, 1939, *W. A. Murrill* (Mo), as *R. ciliosa*. PUTNAM co.: Crescent City, March, 1880, *G. Marten* (Phil). ALACHUA co.: open pine woods 1 mile north of Newberry, *E. Perot Walker*, no. 1862 (Phil), as *R. humilis*; high hummock, Burnett's Lake, April 30, 1939, *W. A. Murrill* (Mo); Gainesville, 1887, *M. F. Price*, as *R. ciliosa*, var. *ambigua*; May 12, 1897, *Joseph Crawford* (Phil.), as *R. ciliosa*; hammock near Gainesville, May 31, 1937, *W. A. Murrill* (Mo), as *R. ciliosa*. VOLUSIA co.: Port Orange, *F. C. Straub*, no. 120, as *R. ciliosa*, var. *ambigua*; sandy soil, Ormond, April 23, 1903, *H. A. Purdie*, as *R. ciliosa*, altered to *R. humilis*; lush growth by road, north of Ormond, May 16, 1943, *E. H. Butts & Oakes Ames* (Ames); in shade or half-shade, Ormond Beach, May 12, 1943, *Butts & Ames* (Ames); dry soil, Crescent City, June 28, 1943, *E. H. Butts*, as *R. parviflora*. LAKE co.: vicinity of Eustis, *Nash*, nos. 242 (US) and 1801, July, 1894, *A. S. Hitchcock* (Mo); pinelands east of Eustis, *J. K. Small*, no. 8667 (NY), as *R. parviflora*; dry wood-border, Hiawatha Lake, *Wiegand & Manning*, no. 2932, as *R. parviflora*. SUMTER co.: Lake Ashtachula, March 29, 1879, *J. D. Smith* (US), as *R. strepens*. HERNANDO co.: rich open woods, Brooksville. April 9, 1927, *Hugh O'Neill* (Mo). POLK co.: Peace Creek, March, 1880, *J. D. Smith* (US), as *R. strepens*, dry pineland, April 12, 1894, *L. B. Ohlinger* (Mo), as *R. strepens*. OSCEOLA co.: sandy soil, Kissimmee, April 5, 1936, *Mary L. Singletary* (Duke). MANATEE co.: Manatee, *S. M. Tracy*, no. 6758 (NY, US). DADE co.: pine woods near Rockdale, *J. L. Fennell*, no. 270 (USNA). KENTUCKY: OWEN co.: about 1

mile north of Scott Co. line, *E. L. Braun*, no. 3204 (Braun). JEFFERSON CO.: 3 miles south of Louisville, July 5, 1892, *L. S. Bergman*, in part (Mo), as *R. ciliosa*. CALLOWAY CO.: upland oak woods just west of the Tennessee River, *Gleason*, no. 8950 (NY). TENNESSEE: COCKE CO.: Newport, June 6, 1925, *O. M. Freeman* (USNA). KNOX CO.: Knoxville, *Ruth*, no. 101, as *R. strepens*. FRANKLIN CO.: Cowan, *Biltmore Herb.*, no. 849^e (US), as *R. ciliosa*; woods north of Sheridan, June 6, 1897, *H. Eggert* (Mo). DAVIDSON CO.: Ridge Top, July 13, 1897, *Eggert* (Mo). SHELBY CO.: Memphis, *Fendler*, as *R. ciliosa*. ARKANSAS: ST. FRANCIS CO.: Crowley's Ridge, Forrest City, *Demaree*, no. 15,137 (Mo), possibly, when more material available, to be placed elsewhere. PLATES 861–863; MAP 14.

11b. Var. **semicalva**, var. nov. (TAB. 864), var. *typicae* similima; caule vix villosa-hirsutis; foliis subtus glabrescentibus vel sparse strigosis; capsulis plerumque glabris.—Of much wider range, from central Florida to South Carolina, locally to southeastern Virginia, westward to eastern Texas. VIRGINIA: SOUTHAMPTON CO.: rich woods, Violet Hill, near Devil's Elbow, June 23, 1936, *Fernald, Long & Smart*, no. 5922 (TYPE in Herb. Gray; ISOTYPES in Herb. Phil. Acad., etc.), as *R. ciliosa*; about Franklin, *Heller*, no. 953 (US), as *R. ciliosa*. NORTH CAROLINA: CHATHAM CO.: dry soil, Silver City, *Biltmore Herb.*, no. 849^j (US), as *R. ciliosa*. COLUMBUS CO.: grassy woodland at Lake Waccamaw, *Godfrey & Shunk*, no. 4170, as *R. parviflora*. NEW HANOVER CO.: Wilmington, June, 1894, *J. M. Macfarlane* (Pa). SOUTH CAROLINA: GEORGETOWN CO.: shady, weedy waste place, Georgetown, *Godfrey & Tryon*, no. 1683. WILLIAMSBURG CO.: rich woods, 10 miles southeast of Gourdin, *Godfrey & Tryon*, no. 433. BERKELEY CO.: railroad right-of-way, south of Moncks Corner, *R. F. Martin*, no. 1130 (USNA), as *R. parviflora*. CHARLESTON CO.: near Charleston, Aug. 1886, *L. R. Gibbes* (NY), as *R. parviflora*. ANDERSON CO.: dry rich woods, Anderson, *John Davis*, no. 9193 (Mo), as *R. parviflora*. GEORGIA: WITHOUT DEFINITE LOCALITY: middle Georgia, *T. C. Porter*. JEFFERSON CO.: July 8, 1897, *M. H. Hopkins* (NY), as *R. parviflora*. LIBERTY CO.: Sunbury, *LeConte* (NY), as *R. ciliosa*. JASPER CO.: fence-corner, 1846, *T. C. Porter* (approaching var. *dentata*). COBB CO.: moist field near brook, Marietta, June 12, 1885, *R. N. Larrabee*. WALKER OR DADE CO.: foot of Lookout Mt. near road out of St. Elmo, June 6, 1921, *O. M. Freeman* (USNA). FLORIDA: LAKE CO.: clay soil, vicinity of Eustis, *Nash*, no. 242. SUMTER CO.: March 29, 1879, *J. D. Smith* (US), as *R. strepens*. CITRUS CO.: moist shaded rock north of Pineola, *H. J. Oosting*, no. 135 (Duke). BREVARD CO.: hammock along Indian River, Coco, *J. K. Small*, no. 8727. SEMINOLE CO.: moist grassy clearing, south of Sanford, *Moldenke*, no. 184 (Duke, Mo, NY, Pa), as *R. parviflora*. POLK CO.: sandy

roadside, Winter Park, March 8, 1923, *Hunnewell*, no. 8732 (FWH). HILLSBORO CO.: Tampa, May, 1876, *A. P. Garber* (Phil, US), as *Dipt. cilius*. LEON CO.: near Tallahassee, *N. K. Berg* (NY), as *R. parviflora*. WAKULLA CO.: prope St. Marks, Mai, 1843, *Rugel*, with an unpublished name (NY). CALHOUN CO.: Iola, *Chapman* (Mo). TENNESSEE: HAMILTON CO.: old fields, Sequach Valley, *Biltmore Herb.*, no. 849^h (US), as *R. ciliosa*. ALABAMA: DEKALB AND ETOWAH COS.: Lookout Mt., July 6 and 8, 1898, *H. Eggert* (Mo). ETOWAH CO.: Gadsden, 1878, *G. R. Vasey* (US), as *R. ciliosa*. CULLMAN CO.: woods, June and Sept., 1897, *H. Eggert* (Mo). HALE CO.: Greensboro, 1857, *Sereno Watson*, as *R. ciliosa*, var. *ambigua*. LEE CO.: dry pine woods, *J. D. Smith*, no. 1940 (US), as *R. strepens*. MONTGOMERY CO.: low abandoned field near Montgomery, June 18, 1932, *J. K. Edwards* (Pa). DALLAS CO.: 1879, *Wm. Trelease* (Mo), as *Dipt. cilius*. CONECAH CO.: Evergreen, *Baker & Earle*, no. 39 (US), as *R. ciliosa*. MONROE CO.: dry hills, July 23, 1885, *Mohr* (US), as *R. ciliosa*. MOBILE CO.: Mobile, 1905, *W. C. Dukes*, as *R. parviflora*; pine barrens, Spring Hill, *E. W. Graves*, no. 498, in part (Mo). MISSISSIPPI: GRENADA CO.: moist wooded hillside, Pay West's Lake, May 27, 1932, *Vena Millsaps* (NC), as *R. ciliosa*. OKTIBBEHA CO.: Starkville, July 26, 1890, *S. M. Tracy*, as *R. strepens* (NY)—plant habitally resembling var. *dentata*. LAUDERDALE CO.: Meridian, *S. M. Tracy*, no. 3271 (NY), resembling var. *cheloniformis*. JACKSON CO.: Ocean Springs, *Josephine Skehan* as *Seymour & Earle*, no. 154, as *R. ciliosa*, var. *ambigua*, June 7, 1895, *Skehan*, as *R. ciliosa* (simulating var. *cheloniformis*). HARRISON CO.: Biloxi, *S. M. Tracy*, nos. 4944 (Mo, NY, US—very mixed no., some specimens nearly var. *salicina*), 6434 (NY, US), 6435 (G, Mo, NC, NY, US—some plants nearly var. *salicina*, others approaching var. *nanella*), as *R. strepens*. COPIAH CO.: Brushy Creek, Crystal Springs, May 18, 1925 (US), as *R. parviflora*. LOUISIANA: ST. TAMMANY PARISH: vicinity of Covington, *Bro. Anect*, no. 65 (US), as *R. parviflora*; *Bro. G. Arsène*, no. 12,240 (US), as *R. parviflora*. IBERIA PARISH: moist open grassy woods, Avery Island, *D. S. & H. B. Correll*, no. 9525. RAPIDES PARISH: Alexandria, *Hale* (NY), as *R. strepens*, corrected by Britton to *R. ciliosa*. NATCHITOCHE PARISH: woods near Marthaville, May 5, 1893, *Langlois* (US), as *R. ciliosa*. TEXAS: UPSHUR CO.: sandy woods, Big Sandy, *Reverchon*, no. 2536 (Mo), as *R. parviflora*. LIBERTY CO.: low woods, Dayton, *E. J. Palmer*, no. 7768 (Mo), as *R. parviflora* (plant resembling large-leaved var. *membranacea*). HARRIS CO.: Houston, *G. L. Fisher*, no. 81 (US), as *R. parviflora*. PLATE 864; MAP 15.

11c. Var. SEMICALVA, forma **detonsa**, f. nov., caule, foliis, calycis segmentibusque minute canescento-puberulis eis ecilia-

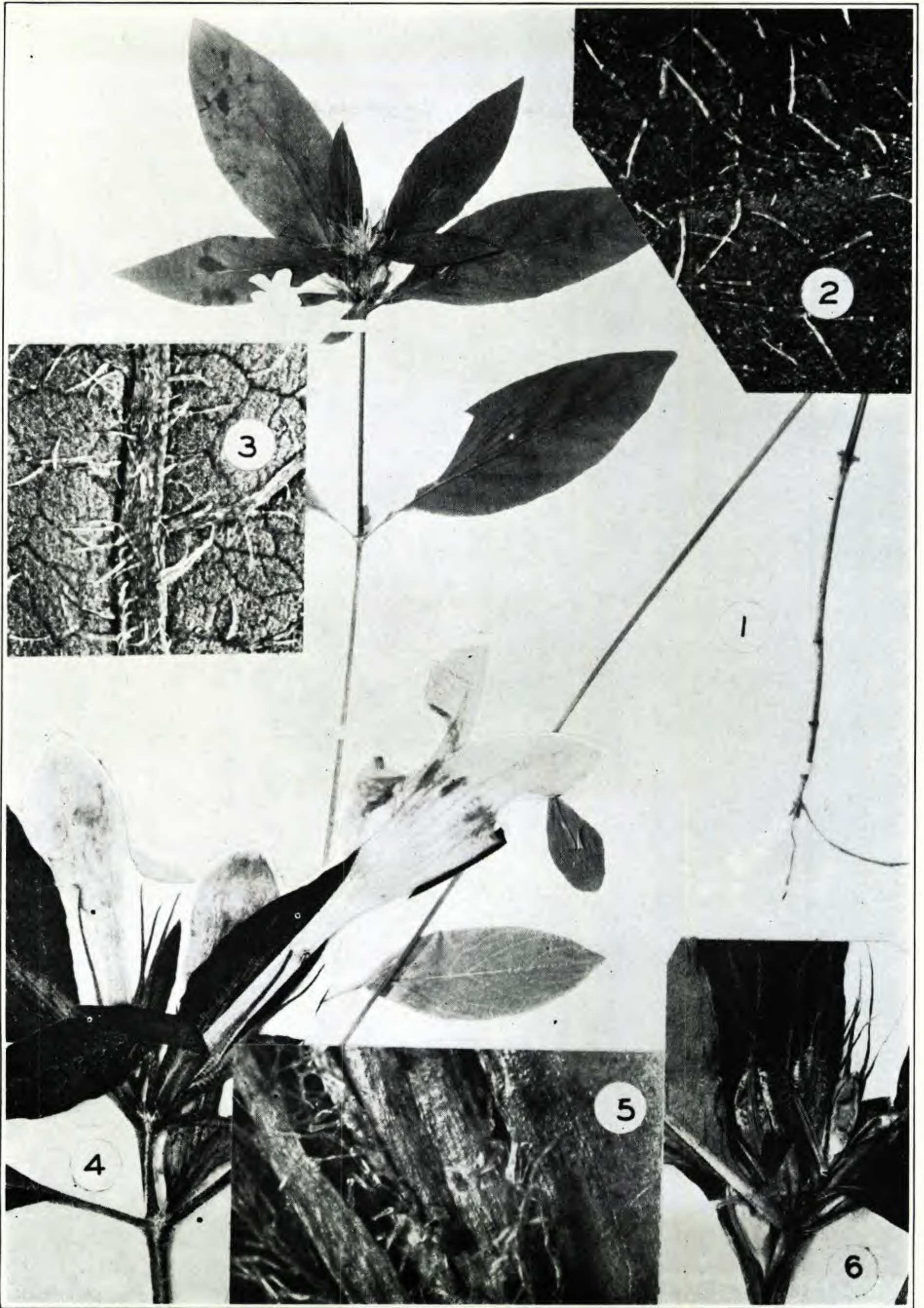


Photo. B. G. Schubert.

RUELLIA CAROLINIENSIS, var. *MEMBRANACEA*: FIG. 1, TYPE, $\times \frac{1}{2}$; FIG. 2, upper, and FIG. 3, lower surface of leaf, $\times 10$; FIG. 4, flowering tip, $\times 1.7$; FIG. 5, portion of calyx and capsule, $\times 10$; FIG. 6, fruiting summit, $\times 2$



Photo. B. G. Schubert.

RUELLIA CAROLINIENSIS, var. *MEMBRANACEA*: FIGS. 1-3, summits of plants, to show leaf-variation, $\times 1$

tis.—FLORIDA: roadside, Sebring, Highland Co., March 4, 1924, *Hunnewell*, no. 9044 (TYPE in Herb. Hunnewell).

11d. Var. **membranacea**, var. nov. (TAB. 865 et 866), caule 1–9 dm. alto ad basin 1–4 mm. diametro, internodiis valde divergenterque hirsutis; foliis membranaceis 5–12 cm. longis supra strigosis subtus ad venas strigosis vel hirsutis, ovalibus, ovatis, ellipticis vel late lanceolatis obtusis vel subacutis; calycis segmentis dorso glabris vel glabrescentibus longe ciliatis—*R. parviflora* sensu Small, Fl. Se. U. S. 1085 (1903) and sensu Britton in Britton & Brown, Ill. Fl. ed. 2, iii. 242 (1913), excl. fig., which is of *R. Purshiana*; not *R. parviflora* (Nees) Britt. Man. 854 (1901), at least as to basonym, *Dipteracanthus ciliatus*, var. *parviflorus* Nees.—Woods, openings and clearings, either calcareous or subacid, north-central South Carolina to south-central Tennessee, north to southern New Jersey, southeastern Pennsylvania, northern Maryland, West Virginia, southeastern Ohio and north-central Kentucky (unless otherwise noted, distributed as *R. caroliniensis*, *ciliata* or *parviflora*); usually commoner than other vars. northward. NEW JERSEY: CAPE MAY CO.: woods south of Mill Lane, north of Cape May City, Aug. 10, 1918, *W. Stone* (Phil); north of Cape May, Sept. 13, 1901, *C. S. Williamson* (Phil); Cape May Court House, Aug. 6, 1909, *Van Pelt* (Phil); Cold Spring, Sept. 13, 1908, *C. S. Williamson* (Phil), July 18, 1909, *Van Pelt*, no. 12,199 (Pa). PENNSYLVANIA: YORK CO.: below McCall's Ferry, July 11, 1895, *Joseph Crawford* (Phil). DELAWARE: NEW CASTLE CO.: Aug. 9, 1866, *A. Commons* (NY), as *R. strepens*. KENT CO.: moist woods west of Woodland Beach, *R. R. Tatnall*, no. 1462. SUSSEX CO.: Rehoboth, July 8, 1908, *C. S. Williamson* (Pa, Phil); sandy woods east of Milford, July 16, 1896, *A. Commons* (Pa, Phil). MARYLAND: CECIL CO.: Elk Neck, June 24, 1923, *W. L. Abbott* (Phil); woods, high bluff west of Georgetown, Aug. 6, 1938, *Mrs. L. R. Holmes* (Pa); Leslie, July 15, 1891, *Crawford* (Phil); flats, Conowingo, July 29, 1924, *Crawford*; Conowingo, July 25, 1907, *J. J. Carter* (Phil). KENT CO.: near Chestertown, July 11, 1907, *Shreve*, no. 1696 (US). QUEEN ANNE CO.: Aug. 20, 1900, *G. Vanatta* (Phil). TALBOT CO.: railroad ballast, northwest of St. Michaels, *R. R. Tatnall*, no. 386 (Pa); edge of woods, west of Easton, *E. C. Earle*, nos. 2251 (Pa) and 3698 (Pa). WICOMICO CO.: Salisbury, July 14, 1904, *J. J. Carter* (Phil). WORCESTER CO.: roadside through swamp, north of Dividing Creek Bridge, *G. F. Beaven*, no. 455 (Duke). HARFORD CO.: low, moist woods, Creswell, July 28, 1883, *L. W. Brosius* (Pa). BALTIMORE CO.: Baltimore, *Leroy* (NY). PRINCE GEORGE CO.: Hyattsville, Aug. 13, 1904, *Steele* (Mo). CALVERT CO.: low swampy woods, North Bay, Chesapeake Bay, *Muenschler*, no. 3867 (Mo). MONTGOMERY CO.: edge of woods, July 7, 1901, *M. W. Lyon, Jr.* (US). WASHINGTON

co.: island above Harper's Ferry, *F. W. Pennell*, no. 2430 (Phil). DISTRICT OF COLUMBIA: in vicinis Washington, June 29, 1884, *L. F. Ward*; thickets near Ivy City, June 14, 1891, *F. Blanchard* (Mo), as *R. strepens*; open woodland, Washington and vicinity, July 16, 1896, *Steele* (NY, Mo); Congress Heights, *Philip Dowell*, no. 7012. WEST VIRGINIA: NICHOLAS CO.: dry bank, Peter Creek, *Millspaugh*, no. 596 (NY). MASON CO.: along Ohio River, near Pum Roy, *E. E. Berkley*, no. 913 (Mo). CABELL CO.: abandoned wooded pasture, Pleasant Valley, *Gilbert*, no. 483. LINCOLN CO.: near Mills School, *E. E. Berkley*, no. 969 (Mo). WAYNE CO.: dry hillside, Buffalo Creek, *Lewis Plymale*, no. 95. MC DOWELL and WYOMING COS.: woods along Indian Ridge, *E. L. Morris*, no. 1172 (US). VIRGINIA: FAIRFAX CO.: Falls Church, June 23, 1872, *J. J. Carter* (Phil). ALEXANDRIA CO.: Naucks, *Pennell*, no. 2456 (Phil); Fort Myer, July 14, 1895, *E. A. Mearns* (NY), as *R. strepens*. NORTHAMPTON CO.: sandy woods back of the dunes, Savage Neck, *Fernald & Long*, no. 5453. MIDDLESEX CO.: bank of Rapahannock River at Gray's Point, *A. B. Massey*, no. 2115 (VPI). MATHEWS CO.: sandy open soil along North End Branch, "Fort Nonsense", south of Soles, *Wherry & Pennell*, no. 12,616, in part (Phil). GLOUCESTER CO.: Beaver Swamp Creek, north of Gloucester, July 5, 1924, *H. B. Meredith* (Phil). YORK CO.: steep wooded bank, York River, above Mt. Folly, *Fernald & Long*, no. 13,459. JAMES CITY CO.: rich woods and slopes by James River, Grove Landing, southeast of Grove, *Fernald & Long*, no. 13,457; moist rich soil in woods, west side of Jones Millpond, Williamsburg, *Grimes*, no. 3887. CHARLES CITY CO.: wooded slope by James River, at "Four Oaks", below Harrison Point, *Fernald & Long*, no. 13,149. PRINCESS ANNE CO.: rich deciduous woods east of Little Creek, *Fernald & Long*, no. 4193; sandy woods, northern end of Knott's Island, *Fernald & Long*, no. 4194, in part. NORFOLK CO.: Portsmouth, June, 1840, in part, *Rugel* (NY). ISLE OF WIGHT CO.: thicket back of sandbeach of Burwell's Bay, James River, below Rushmere (Fergusson's Wharf), *Fernald & Long*, no. 13,150. SURRY CO.: rich calcareous wooded ravines along James River, Claremont, *Fernald & Long*, nos. 13,762 and 13,837; rich calcareous wooded ravine near James River, northwest of Chippokes, July 25, 1941, *Fernald & Long*, no. 13,458. SOUTHAMPTON CO.: border of sandy woods south of Applewhite's Church, *Fernald & Long*, no. 13,153. SUSSEX CO.: border of woods near Nottoway River, Green Church Bridge, southwest of Owen's Store, *Fernald & Long*, no. 12,472 (TYPE in Herb. Gray.; ISOTYPE in Herb. Phil. Acad.). GREENVILLE CO.: bottomland woods along Meherrin River, southeast of Gaskins, *Fernald & Long*, no. 13,151. DINWIDDIE CO.: low woods near Mt. Olivet Church, *Fernald & Long*, no. 14,021. AMELIA CO.: *J. B. Lewis*, nos. 114 and 733 (VPI). BRUNSWICK CO.: bottomland

woods near Western Bridge, Meherrin River, south of Edgerton, *Fernald & Lewis*, no. 14,498. CAMPBELL CO.: vicinity of Lynchburg, July 1, 1892, *Britton, Britton & Vail* (NY). BEDFORD CO.: July 8, 1871, *A. H. Curtiss* (Mo, NY). ROCKBRIDGE CO.: "Near the natural bridge in rich soil along fences", *Pursh* (Phil), correctly called "*Anonymos caroliniensis* Walt."; Natural Bridge, *Margaret P. Russell*. NORTH CAROLINA: PASQUOTANK CO.: oak-pine-beech woods south of Elizabeth City, *Wiegand & Manning*, no. 2929. TYRRELL CO.: open woodland, Columbia, *Godfrey*, no. 4322. PITT CO.: pine woodland near Farmville, *Godfrey*, no. 4278. WARREN CO.: Warrenton, July 19, 1924, *H. B. Meredith* (Phil). GRANVILLE CO.: wet meadow, Oxford, *M. F. Buell*, no. 1404 (US). DURHAM CO.: shaded low woods, Duke Forest, *Blomquist*, no. 367 (US). WAKE CO.: sandy bank west of Raleigh, *Wiegand & Manning*, no. 2930. BLADEN CO.: moist sandy soil, *Biltmore Herb.*, no. 849^a. ORANGE CO.: woods near Chapel Hill, Aug. 17, 1909, *Coker* (NC), June 23, 1933, *M. T. Cameron* (NC); dry open woods, Hollow Rock, *C. C. Wilson*, no. 17 (Mo). CHATHAM CO.: dry soil, Silver City, *Biltmore Herb.*, no. 849^j. FORSYTH CO.: moist woods near Mt. Carmel, *Correll*, no. 2591 (Duke). SURRY CO.: moist shaded cove, Pilot Mt., *R. M. Williams*, no. 464 (Duke). ROWAN CO.: vicinity of Salisbury, *Heller*, no. 140 (NY, Phil). POLK CO.: near Columbus, July 22, 1897, *E. C. Townsend* (US). MADISON CO.: open woods, bluff along river, Hot Springs, *Oosting*, no. 34,230 (Duke). BUNCOMBE CO.: Biltmore, *Biltmore Herb.*, no. 849^b, in part (US); Weaversville, July 8, 1933, *H. B. Teague* (Duke). SWAIN CO.: partly shaded roadside near Cherokee Lodge, rare, *R. A. McLean*, no. 73 (Duke). SOUTH CAROLINA: DARLINGTON CO.: woods at Lauther's Lake, *Budd E. Smith*, no. 1652 (NC). LEXINGTON CO.: vicinity of Batesburg, *E. A. McGregor*, no. 309 (US), as *R. hybrida*. GREENVILLE CO.: summit of Paris Mt., July, 1896, *J. K. Small* (NY). ANDERSON CO.: damp soil, Anderson, *John Davis*, no. 8394 (US, Mo, same no. with label copied and data changed to "dry ground" by B. F. Bush whose Missouri plant grows in dry ground). OCONEE CO.: thickets, *A. P. Anderson*, no. 1222 (US); Clemson College, *H. D. House*, no. 2384 (NY). GEORGIA: CLARKE CO.: roadside, Athens, *L. M. Perry*, no. 1083, as *R. humilis*. OHIO: MEIGS CO.: Letart, Sept. 10, 1935, *C. H. Jones* (NY). KENTUCKY: LOCALITY NOT DEFINITELY PLACED: "Ky river hills, mouth of Hickman Cr.", July, 1832, *C. W. Short*, as *R. strepens* (Phil), sent to Hooker who wrote in 1833: "The other *Ruellia* [var. *nanella*] with small flow^s looks diff^t—But I am much puzzled with the Genus". ROWAN CO.: prairie patch, Clark Mt., *E. L. Braun*, no. 1930 (Braun). MENIFEE CO.: oak woods, dry limestone slope, Red River valley, *E. L. Braun*, no. 2128 (Braun). BELL CO.: rocky woodland, Pineville, *Pennell*, no. 11,804 (Phil);

sandy soil, slope of Pine Mt. at Frakes, *E. L. Braun*, no. 1530 (Braun). ROCKCASTLE CO.: wooded gully, south of Livingston, *Smith & Hodgdon*, no. 3785 (US). OWEN CO.: about 1 mile north of Scott Co. line, *E. L. Braun*, no. 3204 (Braun); wooded slope, Severn Creek, *E. L. Braun*, no. 4578 (Braun). WAYNE CO.: Beaver Creek, *E. L. Braun*, no. 3099 (Braun). JEFFERSON CO.: 3 miles south of Louisville, July 5, 1892, *L. S. Bergmann* (Mo). LARUE CO.: open cedar slope, limestone, Upton, *E. L. Braun*, no. 1970 (Braun). TENNESSEE: SEVIER CO.: Great Smoky Park, near Gatlinburg, 1932, *Mrs. C. D. Walcott* (US). KNOX CO.: Knoxville, *Ruth*, no. 101, as *R. strepens*. HAMILTON CO.: old fields, Sequachie Valley, *Biltmore Herb.*, no. 849^h (US); Chickamauga Park, May 25, 1911, *J. R. Churchill* (Mo). FRANKLIN CO.: dry soil, Cowan, *Biltmore Herb.*, no. 849^e (US); woods north of Shernwood, June 6, 1897, *H. Eggert* (Mo). CHEATHAM CO.: limestone bluffs, Kingston Springs, *Svenson*, no. 42. MAP 16.

11e. Var. MEMBRANACEA, forma **breviberbis**, f. nov. (TAB. 867, FIG. 4-6); var. *membranaceae* simillima, caulis internodiis puberulis vel glabrescentibus rare sparseque hirsutis.—Scattered through the general range. MARYLAND: ANNE ARUNDEL CO.: Bay Ridge, July 13, 1897, *F. H. Knowlton* (US). WEST VIRGINIA: CABELL CO.: dry field in clay soil, near Roland Park, *Gilbert & Gilbert*, no. 259 (VPI). NORTH CAROLINA: POLK CO.: wet shaded ground, Tryon, *D. C. Peattie*, no. 1351 (NC). GEORGIA: DEKALB CO.: Stone Mountain, July 1-8, 1886, *Small* (TYPE in Herb. NY. Bot. Gard.). TENNESSEE: COCKE CO.: near Wolf Creek, *Kearney*, no. 863 (US).

11f. Var. MEMBRANACEA, forma **hypopsila**, f. nov. (TAB. 867, FIG. 1-3), var. *membranaceae* simillima; caulis internodiis plerumque pubescentibus; foliis subtus glabris vel subglabris, vix strigosis, supra strigosis; calycis segmentis ciliatis.—Occasional in Virginia and North Carolina. VIRGINIA: ELIZABETH CITY CO.: Old Point Comfort, Sept. 15, 1895, *Britton* (NY). NORFOLK CO.: near Northwest, *Kearney*, no. 1565 (US). SURRY CO.: border of bottomland woods along Blackwater River, about 1 mile southwest of Dendron, June 14, 1941, *Fernald & Long*, no. 13,148 (TYPE in Herb. Gray.; ISOTYPE in Herb. Phil. Acad.), no. 13,491 (fruit of preceding). SOUTHAMPTON CO.: dry sandy pine woods by Nottoway River, near Carey Bridge, *Fernald & Long*, no. 13,147; alluvial wooded bottomland of Nottoway River, Cypress Bridge, *Fernald & Long*, no. 8470; wooded alluvial bottomland of Meherrin River, near Haley's Bridge, *Fernald & Long*, no. 8471. SUSSEX CO.: bottomland woods along Nottoway River, east of Huske, *Fernald & Long*, no. 13,761. NORTH CAROLINA: ORANGE CO.: meadow below Durham-Chapel Hill Bridge, June 26, 1915, *Coker & Totten*, transition to next form (NC).

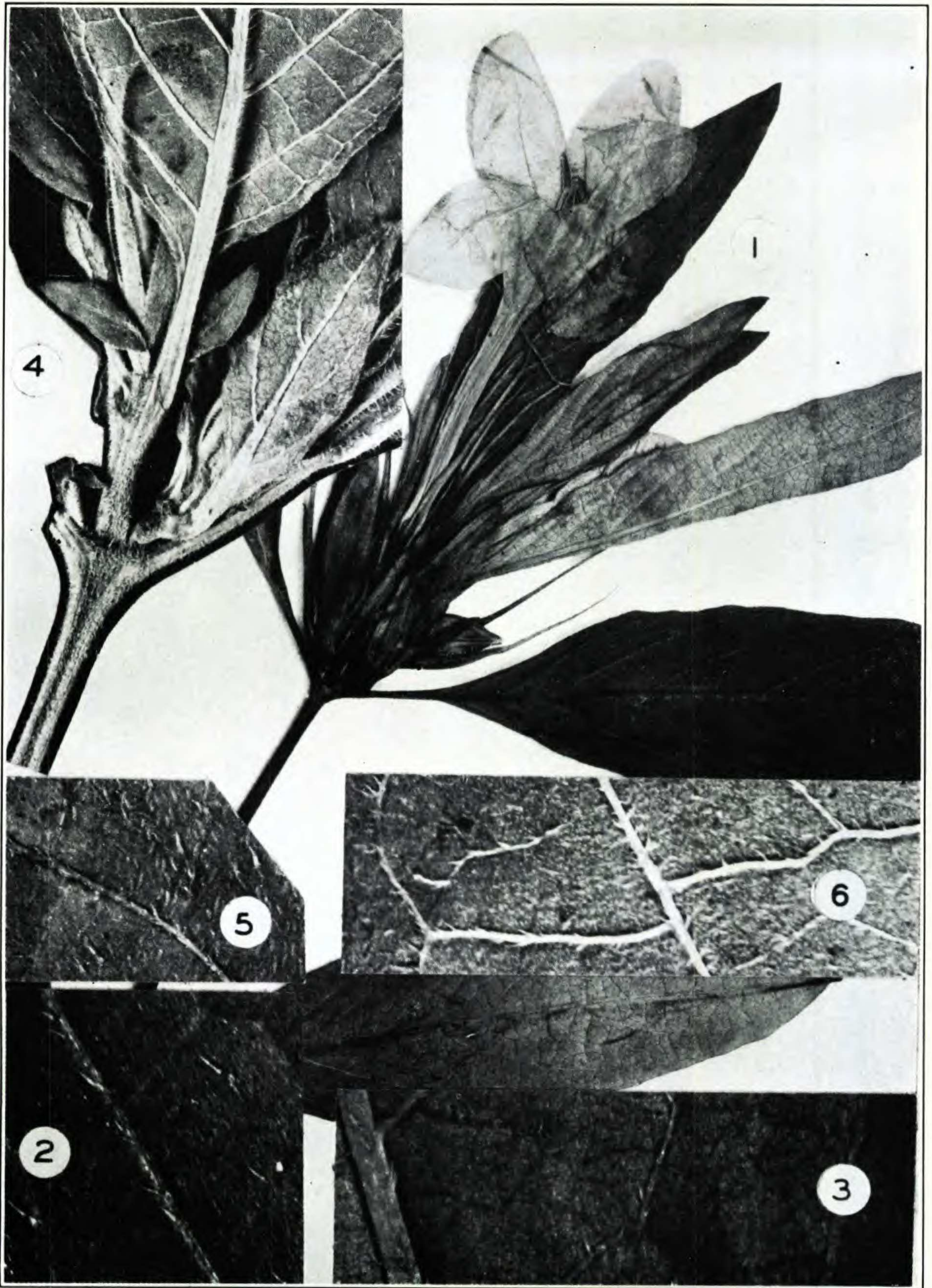


Photo. B. G. Schubert.

RUELLIA CAROLINIENSIS, var. *MEMBRANACEA*, forma *HYPOPSILA*: FIG. 1, summit, $\times 1$, of TYPE; FIG. 2, upper, and FIG. 3, lower surface of leaf, $\times 10$

Var. *MEMBRANACEA*, forma *BREVIBERBIS*: FIG. 4, internode and leaves, $\times 1.7$; FIG. 5, upper, and FIG. 6, lower surface of leaf, $\times 10$

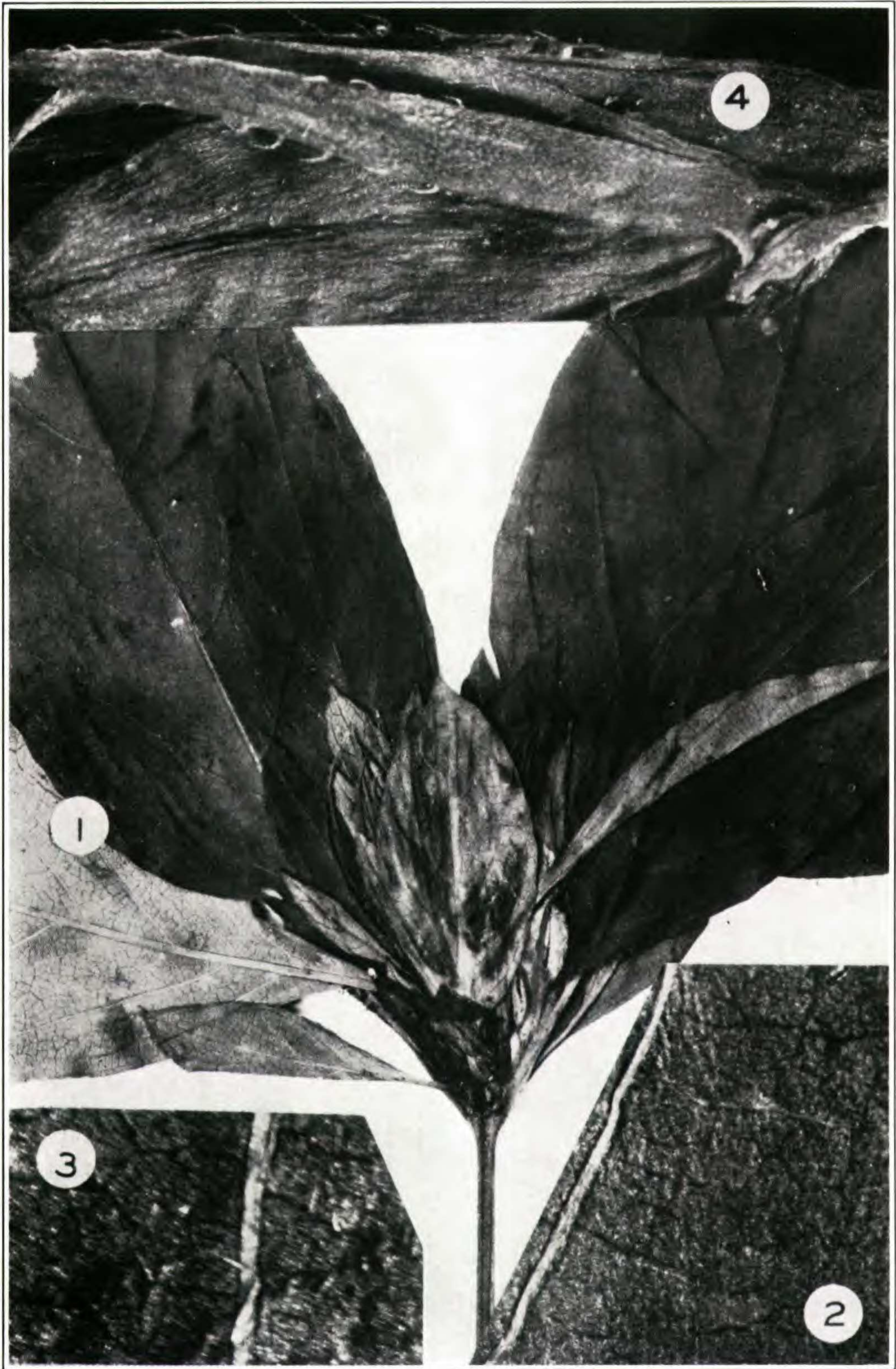


Photo. B. G. Schubert.

RUELLIA CAROLINIENSIS, var. *MEMBRANACEA*, forma *LAEVIOR*: FIG. 1, fruiting summit, $\times 1.7$, of TYPE; FIG. 2, upper, and FIG. 3, lower surface of leaf, $\times 10$; FIG. 4, portion of calyx-segment and capsule, $\times 10$

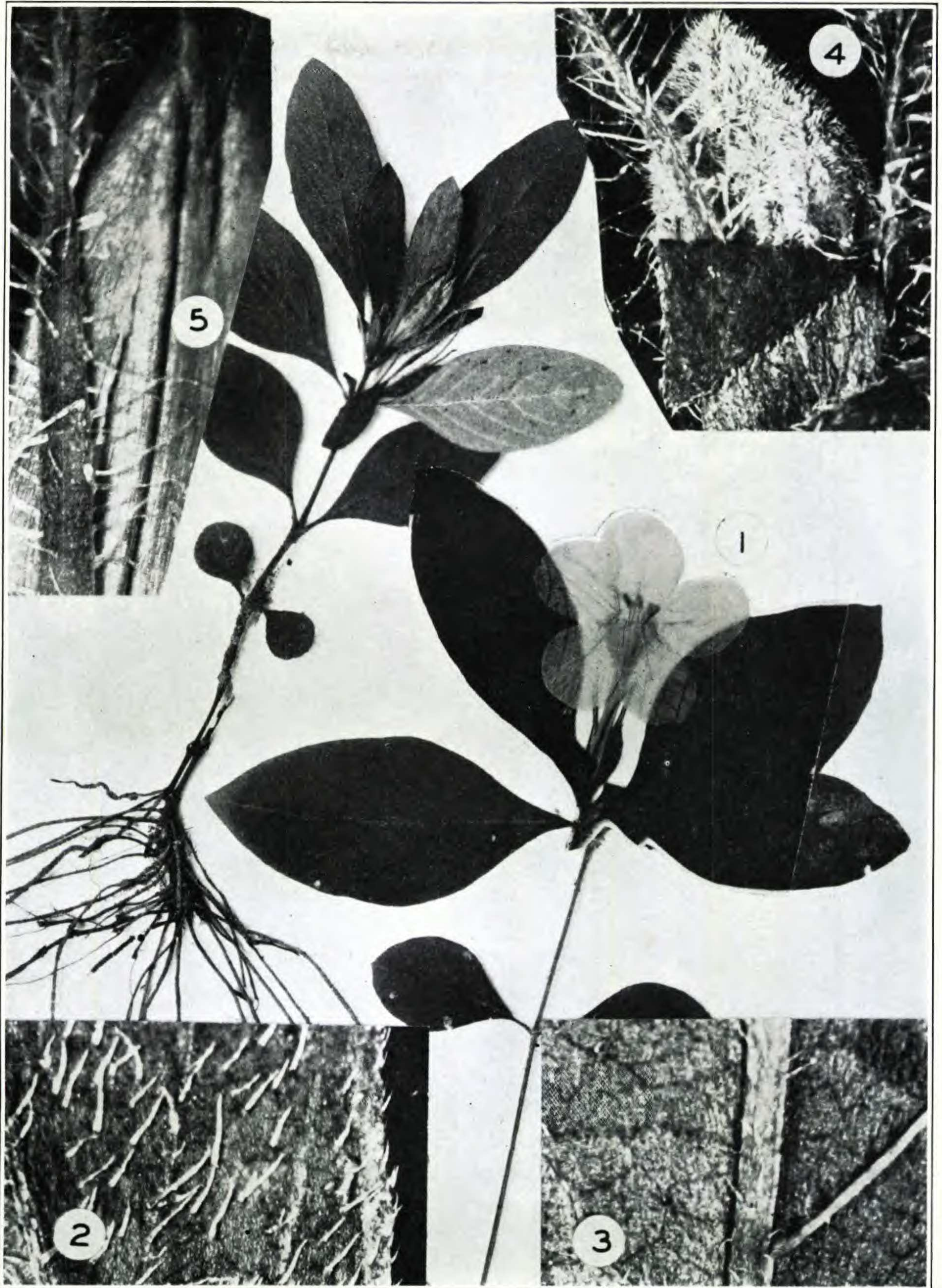


Photo. B. G. Schubert.

RUELLIA CAROLINIENSIS, var. *NANELLA*: FIG. 1, TYPE (2 plants), $\times 1$; FIG. 2, upper, and FIG. 3, lower surface of leaf, $\times 10$; FIG. 4, flower-bud, with folded bract and 2 calyx-segments, $\times 10$; FIG. 5, portion of calyx-segment and capsule, $\times 10$



Photo. B. G. Schubert.

RUELLIA CAROLINIENSIS, var. NANELLA: FIG. 1, internode and base of leaf, $\times 4$
 R. CAROLINIENSIS, var. NANELLA, forma ECILIATA: FIG. 2, TYPE (3 plants), $\times 1$; FIG. 3,
 portion of leaf, bracts and internodes, $\times 10$; FIG. 4, portion of calyx and capsule, $\times 10$

11g. Var. **MEMBRANACEA**, forma **laevior**, f. nov. (TAB. 868), var. *membranaceae* simillima; caulis internodiis glabrescentibus; foliis utrinque glabris glabrescentibusve; calycis laciniis eciliatis vel vix ciliatis.—Local, Virginia and North Carolina. VIRGINIA: SOUTHAMPTON CO.: wooded alluvial bottomland of Meherrin River, near Haley's Bridge, *Fernald & Long*, no. 9151. GREENSVILLE CO.: bottomland woods along Meherrin River southeast of Gaskins, Aug. 3, 1941, *Fernald & Long*, no. 13,462 (TYPE in Herb. Gray.; ISOTYPE in Herb. Phil. Acad.). AMELIA CO.: July 1, 1936, *J. B. Lewis*, no. 114 (VPI). NORTH CAROLINA: ORANGE CO.: swamp of New Hope Creek, 5 miles east of Chapel Hill, June 30, 1931, *H. R. Totten* (NC); meadow 3 miles out from Chapel Hill, on Raleigh Road, 1931, *T. N. Webb* (NC).

11h. Var. **nanella**, var. nov. (TAB. 869 et 870, FIG. 1), caule filiformi ad basin 1–2 mm. diametro 1–3(–4) dm. alto, internodiis valde divergenter villosa-hirsutis; foliis membranaceis, ellipticis vel oblongis majoribus 2–6 cm. longis; calycis segmentis 1.3–2 cm. longis, ciliatis dorso plerumque glabrescentibus.—Dry to moist woods, local, eastern Maryland to Kentucky, south to South Carolina; southern Mississippi. MARYLAND: CECIL CO.: loamy, wooded slope, Duffy Creek, 2 miles southeast of Cecilton, *B. Long*, no. 48,422 (Phil.); North East, Sept. 2, 1894, *Joseph Crawford* (Phil), transition to var. *membranacea*. KENT CO.: Chestertown, July 29, 1901, *E. G. Vanatta* (Phil), transition to var. *membranacea*. CHARLES CO.: dense woods, Tompkinsville, *Leonard & Killip*, no. 838 (US). VIRGINIA: NANSEMOND CO.: near Suffolk, *Kearney*, no. 1718 (US); dry sandy woods above Nansemond River, east of Cahoon Pond, northwest of Suffolk July 23, 1941, *Fernald & Long*, no. 13,461 (TYPE in Herb. Gray.; ISOTYPE in Herb. Phil. Acad.). PRINCESS ANNE CO.: Oceana, July 2, 1923, *H. B. Meredith*, in part (Phil), transition to var. *membranacea*; dry, mixed woods, Little Neck, *Fernald & Long*, no. 4195, transition to var. *membranacea*. NORTH CAROLINA: HALIFAX CO.: Weldon, July, 1875, *Mac Elwee* (Phil). MCDOWELL CO.: Old Fort, June, 1872, *Walter Faxon*. ORANGE CO.: Chapel Hill, July, 1931, *Vena Millsaps* (NC). SOUTH CAROLINA: DARLINGTON CO.: damp shady woods near Auburn, June 27, 1909, *Coker* (NC). KENTUCKY: poor dry hill on the Kentucky River, 1832, *C. W. Short* (Phil), this material referred to Hooker (see note under Kentucky specimens of var. *membranacea*), with the following note: "Is this plant specifically distinct from *R. strepens* in another part of the Collection? Found on a poor dry hill on the Ky river. It flowers later than the former & is much more starved in its growth." MISSISSIPPI: JACKSON CO.: Ocean Springs, *A. B. Seymour*, no. 91 8 22, as *R. ciliosa*. HARRISON CO.: Biloxi, *Lloyd & Tracy*, no. 347, in part (NY). MAP. 17.

11i. Var. **NANELLA**, forma **eciliata**, f. nov. (TAB. 870, FIG. 2–4),

var. *nanellae* simillima, internodiis glabrescentibus vel puberulentibus; foliis vix vel minutissime strigosis; calycis laciniis eciliatis.—Local, southeastern VIRGINIA: SOUTHAMPTON CO.: dry sand of open alluvial flat by Blackwater River, southeast of Unity, July 4, 1942, *Fernald & Long*, no. 14,412 (TYPE in Herb. Gray.; ISOTYPE in Herb. Phil. Acad.); white sand of pine and oak woods at Round Gut, southwest of Franklin, *Fernald & Long*, no. 13,154. SUSSEX CO.: bushy clearing southeast of Stony Creek, *Fernald & Long*, no. 13,145, taller plants, transitional to var. *membranacea*, forma *laevior*. MISSISSIPPI: SIMPSON CO.: Magel, *E. G. Holt*, no. 5 (US), as *R. humilis*.

11j. Var. **cheloniformis**, var. nov. (TAB. 871 et 872), caule stricto vix vel sparse ramoso 4.5–9 dm. alto basin versus 2–5 mm. diametro plus minusve hirsuto; foliis subcoriaceis firmis duris lanceolatis vel lanceolato-ovatis subacuminatis, majoribus (supernis) 6–12 cm. longis 2–4.5 cm. latis, subtus ad venas strigosis vel hispidis supra strigosis; nodis floriferis 1–4 approximatis vel imis 3–15 cm. distantibus; glomerulis congestis; calycis laciniis dorso glabris vel sparse hirsutis ciliatis; corollis 3–4.5 cm. longis.—Woods and clearings, north-central South Carolina and northern Georgia, north to southern New Jersey, northern Maryland and northern Virginia, more rarely to Kentucky and southern Indiana. NEW JERSEY: CAPE MAY CO.: margins of fresh meadows east of Cape May Court House, *Long*, no. 6685 (Phil), appr. var. *membranacea*; Cape May Court House, 1886, *Isaac Burk* (Pa, Phil); woods, Cold Spring, July 18, 1908, *Van Pelt* (Phil). DELAWARE: SUSSEX CO.: Rehoboth, July 8, 1908, *Van Pelt* (Phil). MARYLAND: CECIL CO.: North East, July 20, 1890, *J. B. Brinton* (Pa), as *R. strepens*; Elk Neck, June 24, 1923, *W. L. Abbott* (Phil); moist soil below Cromley's Mount, *Pennell*, no. 1591 (Pa). MONTGOMERY CO.: Little Falls Brook, *Pennell*, no. 2439 (Phil). ST. MARYS CO.: Point Lookout, July 13, 1930, *O. M. Freeman* (USNA). DISTRICT OF COLUMBIA: Brookland, July 17, 1897, *Carrie Harrison* (USNA). VIRGINIA: CLARKE CO.: woods, *Boyce, Hunnewell*, no. 10,742 (FWH). NORTHAMPTON CO.: dry woods, Savage Neck, July 19, 1936, *R. R. Tatnall*, no. 3013 (TYPE in Herb. Gray.). GLOUCESTER CO.: Beaver Swamp Creek, north of Gloucester, July 5, 1924, *H. B. Meredith* (Phil), as *R. parviflora*. ELIZABETH CITY CO.: Hampton, July 22, 1927, *J. R. Churchill*, (Mo), as *R. strepens*. JAMES CITY CO.: open places in moist hardwood ravine, southwest of Williamsburg, *Grimes*, no. 4609 (NY); Jamestown, June 24, 1924, *H. B. Meredith* (Duke). PRINCESS ANNE CO.: Virginia Beach, July 3, 1892, *Britton, Britton & Vail* (NY); pine woods, Virginia Beach, *Fernald & Long*, no. 4191; sandy woods, Knott's Island, *Fernald & Long*, no. 4194, in part. NORFOLK CO.: Portsmouth, June, 1840, *Rugel* (NY). DINWIDDIE CO.: low open pineland, thickets

and clearings just east of McKenney, *Fernald & Long*, no. 14,413. MECKLENBURG CO.: roadside-thicket, 6 miles north of Clarks-ville, *F. R. Fosberg*, no. 15,463. HALIFAX CO.: old clearing, east of Dan River, *Fosberg*, no. 15,384. NORTH CAROLINA: CAMDEN CO.: low, moist bushy soil, near Shiloh, *Correll*, no. 2068 (Duke). WASHINGTON CO.: moist soil near Scuppermong, *Correll*, no. 1918 (Duke). GREENE CO.: pine woodland, Farmville, *Godfrey*, no. 4278 (Duke, US), transition to var. *membranacea*. WAKE CO.: pine woodland along Crabtree Creek, 8 miles northwest of Raleigh, *Godfrey*, no. 4991, in part. HARNETT CO.: Buie's Creek, June 29, 1938, *Frances & Sarah Fount* (NC). ROWAN CO.: Salisbury, June, 1872, *LeRoy & Ruger*, in part (NY). FORSYTH CO.: woods, June 20, 1940, *Schallert*. ALEXANDER CO.: on bank, road from Gelreath P. O. to Hidnite, *Radford & Stewart*, no. 1600 (NC). MC DOWELL CO.: Old Fort, *Biltmore Herb.*, no. 849ⁱ (US). BUNCOMBE CO.: Biltmore, *Biltmore Herb.* no. 849^b, in part, mixed with var. *membranacea* (US). POLK CO.: Tryon, July 22, 1897, *E. C. Townsend*, in part (US). SOUTH CAROLINA: FLORENCE CO.: sandy, shady banks of Pee Dee River, near Mars Bluff Bridge, *Wiegand & Manning*, no. 2931, as *R. parviflora*. CHARLES-TON CO.: near Charleston, 1856, *L. R. Gibbes* (NY), as *R. parvi-flora*. OCONEE CO.: Clemson College, *H. D. House*, no. 2384 (US), as *R. parviflora*. GEORGIA: WITHOUT STATED LOCALITY: *Boykin* (NY), as *Dipteracanthus hybridus*; *Porter*, 1846 (Phil) "mid. Georgia, 1846," *Porter*, with the comment: "There is a good deal of confusion among the Ruellias". CLARKE CO.: Athens, June 28, 1930, *J. H. Pyron* (Duke). GWINNETT CO.: Yellow River, near McGuire's Mill, July 2, 1895, *Small* (NY), as *R. ciliosa*, changed by Small to *R. parviflora*; Thompson's Mills, *Allard*, no. 225 (NY, US). FLOYD CO.: Rome, July, 1888, *Gerald McCarthy* (US). INDIANA: JEFFERSON CO.: Hanover, July, 1875, *A. H. Young* (NY). CRAWFORD CO.: roadside near Leavenworth, *Deam*, no. 16,473 (NY), as *R. strepens*. KEN-TUCKY: ROCKCASTLE CO.: wooded gully south of Livingston, *Smith & Hodgdon*, no. 3758 (G), as *R. strepens*. MAP 18.

11k. Var. **salicina**, var. nov. (TAB. 873), caule simplice vel sparse breviterque ramosi tenui 1.5–7 dm. alto canescenti-puberulo vel subvillosa; nodorum superiorum foliis longioribus anguste lanceolatis vel lanceolato-linearibus 0.5–1.5(–2) cm. latis subtus glabrescentibus vel sparse strigosis; calycis segmentis dorso canescenti-pilosis vel glabrescentibus ciliatis; corollis 2–3 cm. longis, fauce supra 5–10 mm. diametro.—Northern Florida to eastern Texas, north, locally, to northern Georgia, Tennessee and southern Indiana. GEORGIA: GWINNETT CO.: Thompson's Mills, *Allard*, no. 224 (US), as *R. parviflora*. FLOYD CO.: decidu-ous woodland, Horseleg Mt., *Pennell*, no. 4099 (Pa). FLORIDA: GADSDEN CO.: open dry woods of pine and oak, River Junction,

Wiegand & Manning, no. 2933. LAKE CO.: dense, moist woodland, Hawkinsville, May 7, 1910, *S. C. Hood* (Mo). INDIANA: CLARK CO.: wet grassy and rocky shore, southwest of Charleston, *F. J. Hermann*, no. 6730. TENNESSEE: DAVIDSON CO.: copses, vicinity of Nashville, Sept., 1885, *Gattinger*. SHELBY CO.: Normal, *C. E. Moore*, no. 69 (US). ALABAMA: BLOUNT CO.: Blount Springs, May 5, 1898, *C. F. Baker* (NY), as *R. pedunculata*. MONROE CO.: Perdue Hill, July 22, 1885, *C. Mohr* (US), as *R. ciliosa*, var. *hybrida*, this altered to var. *ambigua*, then the sheet, in spite of petioles 1.5 cm. long, annotated as the sessile-leaved *R. humilis*! MOBILE CO.: pine barrens and dry pastures, Spring Hill, *E. W. Ganes*, no. 948, in part (US)—the sheet also containing var. *semicalva* and *R. ciliosa*. MISSISSIPPI: CLARKE CO.: Enterprise, *S. M. Tracy*, no. 3288 (NY), as *R. ciliosa*, altered to *R. parviflora*. LOUISIANA: WITHOUT STATED LOCALITY: *Steinhaur*. ORLEANS PARISH: New Orleans, *Drummond*, no. 257, as *Dipteracanthus strepens*, another, with no., as *Calophanes humistrata*. NATCHITOCHE PARISH: open ground, Natchitoches, June 10, 1915, *E. J. Palmer*, no. 7945 (TYPE in Herb. N. Y. Bot. Gard.; ISOTYPES in Herb. Mo. Bot. Gard. and U. S. Nat. Herb.) RAPIDES PARISH: pine-barren hills, vicinity of Alexandria, *C. R. Ball*, nos. 559 (US), as *R. strepens*, and 655, in part (Mo)—the latter mixed on a sheet with *R. humilis* var. *frondosa* and quite like the other sheets of no. 559 (presumably the former mixed in handling). IBERIA PARISH: moist open grassy woods, Avery Island, *D. S. & H. B. Correll*, no. 9525. TEXAS: UPSHUR CO.: sandy woods, Big Sandy, *Reverchon*, no. 2536 (Mo); damp sandy soil, Big Sandy, *Reverchon*, no. 1402 (simulating small var. *dentata*). GREGG CO.: rich sandy woods, Gladwater, June 18,, *Reverchon* (Mo). WOOD CO.: damp woods, Mineola, *Reverchon*, no. 2113 (Mo). HARRIS CO.: White Oak Bayou, 4 miles west of Houston, *Lindheimer*, no. 40 (data and no., Mo.; two sheets without no., G), as *R. strepens*. MAP 19.

111. Var. **dentata** (Nees), comb. nov. Stem stiff and relatively strong, simple or more often with ascending branches, the main axis 1.5–9 dm. long, hirsute to puberulent; the lower and median internodes elongate; 4–9 nodes bearing glomerules; leaves oblong, oblong-lanceolate, ovate or elliptic, subcoriaceous, often undulate-dentate, blunt or acutish, the lower and middle ones subequal, the upper reduced and definitely smaller; flowers occasionally cleistogamous; calyx-segments ciliate, 1.8–2.5 cm. long.—*Dipteracanthus ciliosus*, β . *dentatus* Nees in DC. Prodr. xi. 123 (1847).—Chiefly in dry woods and clearings, upland of South Carolina, western North Carolina and eastern Tennessee, north to Delaware, southeastern Pennsylvania, Maryland, northern Virginia, West Virginia, Kentucky and southeastern Indiana. PENNSYLVANIA: YORK CO.: below McCall's Ferry,